

ALCO "T" SERIES THERMO® VALVE PARTS GUIDE

All Purpose Cage Assem. Part No.		Valve Type Numbers			All Purpose Power Assem. Part No.
Old	New	R-12	R-22	R-502	
XC709-B7*	X22440-B1*	TCLE $\frac{1}{4}$ F	TCLE $\frac{1}{2}$ H	TCLE $\frac{1}{4}$ R	XB1019-***1*
XC709-B000*	X22440-B2*	TCLE $\frac{1}{2}$ F	TCLE1H	TCLE $\frac{1}{2}$ R	
XC709-B00*	X22440-B3*	TCLE1F	TCLE2H	TCLE1R	
XC709-B0*	X22440-B4*	TCLE2F	TCLE3H	TCLE2R	
XC709-B6*	—	—	—	—	
XC709-B1*	X22440-B5*	TCLE3F	TCLE5H	TCLE3R	
XC709-B4*	X22440-B6*	TCLE4F	TCLE7 $\frac{1}{2}$ H	TCLE4 $\frac{1}{2}$ R	
XC709-B2*	—	—	—	—	
XC709-B3*	X22440-B7*	TCLE6 $\frac{1}{2}$ F	TCLE10H	TCLE7R	
XC709-B5*	X22440-B8*	TCLE7 $\frac{1}{2}$ F	TCLE12H	TCLE8R	
XC724-B4*		TJL800F	TJL1400H	TJL900R	XC/26-***2B
XC724-B5*		TJL1100F	TJL1800H	TJL1200R	
X9117-B6B		TER13F	TER22H	TER14R	
X9117-B7B		TER15F	TER26H	TER16R	
X9117-B8B		TER20F	TER35H	TER21R	
X9117-B9B		TER25F	TER45H	TER27R	
X9166-B10B		TIR35F	TIR55H	TIR37R	
X9144-B11B		THR45F	THR75H	THR48R	
X9144-B13B		THR55F	THR100H	THR60R	

*Add equalizer code letter; 'A' for internal, 'B' for external.

**Add proper charge code symbol; 'FW' for R-12, 'HW' for R-22, 'RW' for R-502.

NOTE: Delete letter 'E' from valve type for internally equalized valve.



TEMPERATURE-PRESSURE CHART

RED FIGURES = VACUUM BLUE FIGURES = PRESSURE

°F	R-12	R-13	R-22	R-502	R-717 Ammonia
-100	27.0	7.5	25.0	23.3	27.4
-95	26.4	10.9	24.1	22.1	26.8
-90	25.8	14.2	23.0	20.7	26.1
-85	25.0	18.2	21.7	19.0	25.3
-80	24.1	22.3	20.2	17.1	24.3
-75	23.0	27.1	18.5	15.0	23.2
-70	21.9	32.0	16.6	12.6	21.9
-65	20.5	37.7	14.4	10.0	20.4
-60	19.0	43.5	12.0	7.0	18.6
-55	17.3	50.0	9.2	3.6	16.6
-50	15.4	57.0	6.2	0.0	14.3
-45	13.3	64.6	2.7	2.1	11.7
-40	11.0	72.7	0.5	4.3	8.7
-35	8.4	81.5	2.6	6.7	5.4
-30	5.5	90.9	4.9	9.4	1.6
-28	4.3	94.9	5.9	10.5	0.0
-26	3.0	98.9	6.9	11.7	0.8
-24	1.6	103.0	7.9	13.0	1.7
-22	0.3	107.3	9.0	14.2	2.6
-20	0.6	111.7	10.2	15.5	3.6
-18	1.3	116.2	11.3	16.9	4.6
-16	2.1	120.8	12.5	18.3	5.6
-14	2.8	125.7	13.8	19.7	6.7
-12	3.7	130.5	15.1	21.2	7.9
-10	4.5	135.4	16.5	22.8	9.0
-8	5.4	140.5	17.9	24.4	10.3
-6	6.3	145.7	19.3	26.0	11.6
-4	7.2	151.1	20.8	27.7	12.9
-2	8.2	156.5	22.4	29.4	14.3
0	9.2	162.1	24.0	31.2	15.7
2	10.2	167.9	25.6	33.1	17.2
4	11.2	173.7	27.3	35.0	18.8
6	12.3	179.8	29.1	37.0	20.4
8	13.5	185.9	30.9	39.0	22.1
10	14.6	192.1	32.8	41.1	23.8
12	15.8	198.6	34.7	43.2	25.6
14	17.1	205.2	36.7	45.5	27.5
16	18.4	211.9	38.7	47.7	29.4
18	19.7	218.8	40.9	50.1	31.4
20	21.0	225.7	43.0	52.5	33.5
22	22.4	233.0	45.3	54.9	35.7
24	23.9	240.3	47.6	57.4	37.9
26	25.4	247.8	49.9	60.0	40.2
28	26.9	255.5	52.4	62.7	42.6
30	28.5	263.2	54.9	65.4	45.0
32	30.1	271.3	57.5	68.2	47.6
34	31.7	279.5	60.1	71.1	50.2
36	33.4	287.8	62.8	74.1	52.9
38	35.2	296.3	65.6	77.1	55.7
40	37.0	304.9	68.5	80.2	58.6
45	41.7	327.5	76.0	88.3	66.3
50	46.7	351.2	84.0	96.9	74.5
55	52.0	376.1	92.6	106.0	83.4
60	57.7	402.3	101.6	115.6	92.9
65	63.8	429.8	111.2	125.8	103.1
70	70.2	458.7	121.4	136.6	114.1
75	77.0	489.0	132.2	148.0	125.8
80	84.2	520.8	143.6	159.9	138.3
85	91.8	—	155.7	172.5	151.7
90	99.8	—	168.4	185.8	165.9
95	108.3	—	181.8	199.7	181.1
100	117.2	—	195.9	214.4	197.2
105	126.6	—	210.8	229.7	214.2
110	136.4	—	226.4	245.8	232.3
115	146.8	—	242.7	262.6	251.5
120	157.7	—	259.9	280.3	271.7
125	169.1	—	277.9	298.7	293.1
130	181.0	—	296.8	318.0	315.0
135	193.5	—	316.6	338.1	335.0
140	206.6	—	337.3	359.1	365.0
145	220.3	—	358.9	381.1	390.0
150	234.6	—	381.5	403.9	420.0
155	249.5	—	405.1	427.8	450.0
160	265.1	—	429.8	452.6	490.0



ALCO CONTROLS DIVISION
EMERSON ELECTRIC CO.
P. O. BOX 12700
ST. LOUIS, MISSOURI 63141



REFRIGERANT LINE CAPACITIES IN TONS

Copper Tube Type L		Line Size O.D.									
		1/2	5/8	3/4	1 1/8	1 3/8	1 5/8	2 1/8	2 5/8	3 1/8	3 5/8
R-12 40°F Evap.	Liquid Line	2.03	4.00	10.5	21.8	37.8	60.4	125.0	223.0	355.0	533.0
	Dischg. Line	.47	.88	2.30	4.67	8.02	13.0	26.5	46.7	75.3	110.0
	Suct'n Line*	.30	.56	1.46	2.98	5.24	8.20	17.0	30.0	48.0	71.1
R-22 40°F Evap.	Liquid Line	3.5	6.4	17.0	34.4	60.0	95.0	200.0	354.0	572.0	860.0
	Dischg. Line	.86	1.63	4.32	8.64	15.1	23.6	49.8	87.0	136.0	203.0
	Suct'n Line*	.59	1.10	2.89	5.82	9.98	15.95	33.2	58.1	93.1	139.5
R-502 40°F Evap.	Liquid Line	2.19	4.17	11.0	23.3	40.6	65.5	139.0	250.0	406.0	625.0
	Dischg. Line	.68	1.29	3.50	7.10	12.7	20.0	42.6	76.5	127.0	186.0
	Suct'n Line*	.48	.90	2.52	5.03	9.00	14.4	30.2	54.7	89.6	133.0
Iron Pipe		3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
R-717 0°F Evap.	Liquid Line	11.6	23.5	53.2	105.0	225.0	351.0	805.0	1280.0	2270.0	4630.0
	Dischg. Line	—	3.43	7.55	15.0	39.2	58.0	113.0	180.0	316.0	640.0
	Suction Line	—	—	—	3.46	8.90	13.7	26.2	42.2	73.9	151.0

*Capacities indicated are based on a pressure drop equal to 2°F loss per 100 ft. equivalent line length. All other capacities are based on a 1°F loss.

Measuring Operating Superheat

1. Determine suction pressure with accurate gauge at evaporator outlet. On close coupled installations, suction pressure may be read at compressor suction connection.
2. From refrigerant pressure-temperature tables, determine saturation temperature at observed suction pressure.
3. Measure temperature of suction gas at Thermo Valve remote bulb location.
4. Subtract saturation temperature read from tables in step No. 2 from temperature measured in step No. 3. Difference is superheat of suction gas.